STATUS OF THE CLAIMS

Claims 1-47 were originally filed in this patent application. In response to the first office action dated 11/21/2006, an amendment was filed on 02/20/2007 that amended claims 1, 6-10, 12-14, 16, 25, 29, 36, 38, 41, 43 and 46 and cancelled claims 30-31, 39-40 and 44-45. In the pending final office action, claims 1-5, 8, 10-12, 14-29, 32-35, 37, 38, 42, 43, and 47 were rejected under 35 U.S.C. §101 as being directed toward non-statutory subject matter. Claims 1-6, 8, 9, 11-13, 15-24, 29, 32-36, 38, 41, 43, and 46 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,680,614 to Bakuya *et al.* (hereinafter "Bakuya") in view of U.S. Patent Publication No. 2003/0084025 to Zuzarte. Claims 7, 10, 14, 25-28, 37, 42, and 47 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bakuya, in view of Zuzarte, and further in view of U.S. Patent No. 6,463,429 to Geppert *et al.* (hereinafter "Geppert"). No claim was allowed. No claim was amended herein. Claims 1-29, 32-38, 41-43 and 46-47 are currently pending.

REMARKS

Rejection of claims 1-5, 8, 10-12, 14-29, 32-35, 37, 38, 42, 43, and 47 under U.S.C. §101

The examiner rejected claims 1-5, 8, 10-12, 14-29, 32-35, 37, 38, 42, 43, and 47 under 35 U.S.C. §101 as allegedly not providing a tangible result because the claims end in a conditional result. In the rejection the examiner states:

> Under current policy guidelines, claims which end in a conditional result are considered open ended. It is true that the claims produce a useful, concrete and tangible result when the condition is met. However, if the condition is not met, there is no result produced and as a result, the claims fail the test.

Applicants respectfully assert the examiner's rejection of claims 1-5, 8, 10-12, 14-29, 32-35, 37, 38, 42, 43, and 47 under 35 U.S.C. §101 is in error. The examiner states that if the condition is not met, these claims cannot produce a tangible result. Applicants respectfully assert that the when the condition is not met, this lies outside the scope of the claims. A conditional claim limitation is no different than any other claim limitation. Let's assume a claim recites limitations (A), (B) and (C). If a device meets limitations (A), (B) and (C), it infringes the claim. Now let's assume that limitation (C) includes a condition that recites what happens when the condition is satisfied, but does not recite what happens when the condition is not satisfied. If a device meets limitations (A), (B) and (C), it infringes the claim. To meet limitation (C), the device must satisfy the condition. The examiner's position is that if the condition is not met, the claim cannot produce a tangible result. To the contrary, if the condition is not met, this is outside the scope of the literal claim limitations. If an additional limitation (D) specifies what happens when the condition is not met in a dependent claim, the examiner is essentially stating that the independent claim does not produce a tangible result because it does not include limitation (D). This position is in error. The scope of the claims is certain, and because they expressly recite what happens when the condition is met, their scope is limited by their express terms to when the condition is met. To say that an additional

limitation is required to specify what happens when the condition is not met is to impose a requirement for an additional limitation (*e.g.*, (D)) that is not specified in the claim. Claims 1-5, 8, 10-12, 14-29, 32-35, 37, 38, 42, 43, and 47 recite what happens when the condition is satisfied. These claims need not recite what happens when the condition is not satisfied to recite statutory subject matter. If the condition is not satisfied, this lies outside the scope of these claims. Applicants forcefully assert that the examiner's rejection of claim 1-5, 8, 10-12, 14-29, 32-35, 37, 38, 42, 43, and 47 under 35 U.S.C. §101 is in error, and respectfully request reconsideration of the examiner's rejection of these claims. Applicants further request a copy of the policy guidelines referenced by the examiner, as there does not appear to be any such guidelines in the MPEP.

Rejection of claims 1-6, 8, 9, 11-13, 15-24, 29, 32-36, 38, 41, 43, and 46 under 35 U.S.C. §103(a)

The examiner rejected claims 1-6, 8, 9, 11-13, 15-24, 29, 32-36, 38, 41, 43, and 46 under 35 U.S.C. §103(a) as being unpatentable over Bakuya in view of Zuzarte. Each of these claims is addressed below.

Claim 1

Claim 1 recites:

> An apparatus comprising:
> at least one processor;
> a memory coupled to the at least one processor;
> a database residing in the memory;
> a range constraint defined for the database, the range constraint including at least one limit that is dynamically determined from data in the database; and
> a database manager residing in the memory and executed by the at least one processor, wherein the range constraint defines a range that includes the at least one limit, and wherein the database manager allows entry of data into the database when the data lies within the range.

14

The examiner admits Bakuya does not disclose "…at least one limit that is dynamically determined from data in the database…" and claims that Zuzarte does teach "…at least one limit that is dynamically determined from data in the database…" The examiner states:

> Zuzarte discloses selecting a column or generating a virtual column and performing a statistical analysis on the particular column regarding information such as high and low values. From the statistical information, Zuzarte discloses creating constraints that reflect the statistical characteristic of the particular column (Zuzarte: para. 0020, lines 6-12).

Paragraph 0020 lines 6-12 states:

> Statistical information regarding a virtual column can be generated just as for an actual column. For example, statistical information can be gathered regarding the high and low values, the cardinality, the frequency of values and histogram statistics.

The rest of the paragraph 0020 cited by the examiner states:

> Statistical constraints can then be used by the query optimizer to assist in estimating cardinalities. If the optimizer is evaluating a query plan that involves a predicate like C1-C2=10 or C1-C2>=30, the statistical information gathered from the virtual column can be exploited by the RDBMS to generate temporary statistical constraints for use in estimating cardinality.

Zuzarte does teach statistical constraints, but the statistical constraints as taught by Zuzarte are for the express purpose of estimating cardinality, which may they be used to optimize a query. The statistical constraints in Zuzarte are not used to limit the data that may be entered into a database column. The statistical constraints in Zuzarte have nothing to do with range constraints or other integrity constraints. In fact, Zuzarte expressly states that the statistical constraints are different from ordinary integrity constraints at paragraph 0021 lines 1-3.

15

Furthermore, a reasonable combination of the teachings of Bakuya and Zuzarte do not lead to the conclusion drawn by the examiner. Even if a person of ordinary skill in the art had both references in front of them, it would not have been obvious to combine their teachings in the way suggested by the examiner.

In the rejection the examiner states:

> At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the apparatus of Bakuya by adding the feature of at least one limit that is dynamically determined from data in the database, as taught by Zuzarte.

The statistical constraints in Zuzarte have nothing to do with range constraints. As a result, it would have not been obvious to combine Bakuya and Zuzarte as suggested by the examiner.

Applicants respectfully assert the examiner's stated motivation to combine Bakuya and Zuzarte is defective. The examiner states:

> The motivation for doing so would have been because constraining the values of a column to a particular range allows for database queries to be optimized (Zuzarte: para. 0003).

Zuzarte teaches computing statistical constraints to estimate cardinality, which may then be used in optimizing a query. Zuzarte is devoid of any teaching regarding constraining values of a column to a particular range, as stated in the examiner's motivation to combine Bakuya and Zuzarte. Furthermore, the examiner's statement that constraining values of a column to a particular range allows for database queries to be optimized is incorrect, and is not taught anywhere in Zuzarte. Because Zuzarte does not teach or suggest that constraining values of a column to a particular range allows for database queries to be optimized, the examiner's rationale for combining Bakuya and Zuzarte is in error.

16

Bakuya teaches a range constraint with fixed limits. Zuzarte teaches statistical constraints for computing cardinality, which may then be used to optimize queries. Applicants strenuously assert that one of ordinary skill in the art would not be motivated based on the teachings of Zuzarte to modify the range constraint of Bakuya to include one or more limits that are dynamically determined from data in the database as recited in claim 1. As a result the examiner's combination of Bakuya and Zuzarte is in error.

It is also not logical to make the leap from estimating cardinality in Zuzarte to constraining values in a column in Bakuya. The constraints taught by Bakuya and Zuzarte are completely different in their usage and function, and neither Bakuya nor Zuzarte suggest combining the two to achieve a "...range constraint including at least one limit that is dynamically determined from data in the database..." as claimed in claim 1. The only motivation to combine Bakuya and Zuzarte is by the knowledge the examiner has gleaned from applicant's disclosure, which amounts to impermissible hindsight reconstruction. In fact, one could combine the Bakuya and Zuzarte inventions and arrive at a system that includes both without including the claimed invention because the inventions in Bakuya and Zuzarte are separate and distinct from one another, and neither suggests the combination suggested by the examiner. For these reasons, claim 1 is allowable over the combination of Bakuya and Zuzarte. Applicants respectfully request reconsideration of the examiner's rejection of claim 1 under 35 U.S.C §103(a).

Claims 8, 12, 16, 21, 29, 38 and 43

Claims 8, 12, 16, 21, 29, 38 and 43 include limitations similar to those discussed in claim 1 above and are therefore allowable for the same reasons given above for claim 1. Applicants respectfully request reconsideration of the rejection of claims 8, 12, 16, 21, 29, 38 and 43 under 35 U.S.C. §103(a).

Claims 2-6, 9, 11, 13, 15, 17-20, 22-24, 32-36, 41, and 46

The examiner rejected claims 2-6, 9, 11, 13, 15, 17-20, 22-24, 32-36, 41, and 46 under 35 U.S.C. §103(a). Each of claims 2-6, 9, 11, 13, 15, 17-20, 22-24, 32-36, 41, and 46 depend on an independent claim that is allowable for the reasons given above. As a result, each of claims 2-6, 9, 11, 13, 15, 17-20, 22-24, 32-36, 41, and 46 are allowable as depending on an allowable independent claim. Applicants respectfully request reconsideration of the examiner's rejection of claims 2-6, 9, 11, 13, 15, 17-20, 22-24, 32-36, 41, and 46 under 35 U.S.C. §103(a).

Rejection of claims 7, 10, 14, 25-28, 37, 42, and 47 under 35 U.S.C. §103(a)

The examiner rejected claims 7, 10, 14, 25-28, 37, 42, and 47 under 35 U.S.C. §103(a) as being unpatentable over Bakuya, in view of Zuzarte, and further in view of Geppert. Each of these claims is addressed below.

Claim 25

Claim 25 includes limitations similar to those discussed in claim 1 above and is therefore allowable for the same reasons given above for claim 1. Applicants respectfully request reconsideration of the rejection of claim 1 under 35 U.S.C. §103(a).

Claims 7, 10, 14, 26-28, 37, 42, and 47

The examiner rejected claims 7, 10, 14, 26-28, 37, 42, and 47 under 35 U.S.C. §103(a). Each of claims 7, 10, 14, 26-28, 37, 42, and 47 depend on an independent claim that is allowable for the reasons given above. As a result, each of claims 7, 10, 14, 26-28, 37, 42, and 47 are allowable as depending on an allowable independent claim.

Applicants respectfully request reconsideration of the examiner's rejection of claims 7, 10, 14, 26-28, 37, 42, and 47 under 35 U.S.C. §103(a).

Conclusion

In summary, none of the cited prior art, either alone or in combination, teach, support, or suggest the unique combination of features in applicants' claims presently on file. Therefore, applicants respectfully assert that all of applicants' claims are allowable. Such allowance at an early date is respectfully requested. The Examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

By   /derekpmartin/
              Derek P. Martin
              Reg. No. 36,595

MARTIN & ASSOCIATES, L.L.C.
P.O. Box 548
Carthage, MO 64836-0548
(417) 358-4700